

May 8, 2001

Dear Stakeholder:

The Rocky Flats Cleanup Agreement (RFCA) Stakeholder Focus Group will meet at the Broomfield Municipal Center at One DesCombes Drive on May 9, 2001 from 3:30 to 6:30 p.m.

The agenda for the May 9, 2001 meeting is enclosed (Attachment A). We will discuss the following topics:

- RSAL Working Group Workshop Update
- RSAL Workshop - Outcomes and Issues
- Health Effects Workshop Update
- RSALs Task 4 - New Science
- End State Management Discussion - Continued

The meeting minutes for the April 25, 2001 meeting are enclosed as Attachment B.

The RFCA Focus Group Agenda Setting Group held a conference call on May 3, 2001 to plan the path forward as requested at the April 25, 2001 RFCA Focus Group meeting. The revised path forward that resulted from the conference call is enclosed as Attachment C.

In the April 25, 2001 RFCA Focus Group meeting, Dan Miller of the Governor's office stated he would supply the Focus Group with the SB01-145 law signed by Governor Owens. A copy of the Bill is Attachment D.

If you need additional information to prepare you for the Focus Group discussion on May 9, 2001, please contact Christine Bennett of AlphaTRAC, Inc. at 303 428-5670 (cbennett@alphatrac.com). Christine will help to find the appropriate resource for you.

You may call either Christine or me if you have any questions, comments, or suggestions concerning the RFCA Stakeholder Focus Group or the upcoming meeting.

Sincerely,

C. Reed Hodgkin, CCM
Facilitator / Process Manager



ADMIN RECORD
SW-A-004347

DOCUMENT CLASSIFICATION
REVIEW WAIVER FOR
CLASSIFICATION OFFICE

1/47

RFCA Stakeholder Focus Group
April 25, 2001
Participants List

NAME		ORGANIZATION / COMPANY
David	Abelson	RFCLOG
Christine	Bennett	AlphaTRAC, Inc.
Kent	Brakken	U.S. DOE - RFFO
Laura	Brooks	Kaiser-Hill Company, LLC
Lane	Butler	Kaiser-Hill Company, LLC
Kimberly	Chleboun	RFCLOG
John	Ciolek	AlphaTRAC, Inc.
John	Corsi	Kaiser-Hill Company, LLC
Carol	Deck	Kaiser-Hill Co, LLC
Gerald	DePoorter	RFCAB
Shirley	Garcia	City of Broomfield
Joe	Goldfield	RFSALOP
Steve	Gunderson	CDPHE
Mary	Harlow	City of Westminster
Jerry	Henderson	RFCAB
Reed	Hodgin	AlphaTRAC, Inc.
Ken	Korkia	RFCAB
Ann	Lockhart	CDPHE
Carol	Lyons	City of Arvada
John	Marler	RFCLOG
Tom	Marshall	Rocky Mountain Peace and Justice Center
Dan	Miller	Natural Resources and Environment Section Colorado Department of Law
LeRoy	Moore	RMPJC
John	Rampe	U.S. DOE - RFFO
Tim	Rehder	US EPA
Mark	Sattelberg	US Fish and Wildlife Service
Kathy	Schnoor	City of Broomfield
Dave	Shelton	Kaiser-Hill Company, LLC
Noelle	Stenger	RFCAB
Honorable Hank	Stovall	City of Broomfield
Scott	Surovchak	US DOE
Alexander	Williams	DOE-HQ

RFCA Stakeholder Focus Group

April 25, 2001

Meeting Minutes

INTRODUCTION AND ADMINISTRATIVE

A participants list for the April 25, 2001 Rocky Flats Cleanup Agreement (RFCA) Stakeholder Focus Group meeting is included in this report as Appendix A.

Reed Hodgins of AlphaTRAC, Inc., meeting facilitator, reviewed the purpose of the RFCA Focus Group. Then he went over the meeting rules. Introductions were made.

Reed then asked if there were any questions or comments regarding the March 28, 2001 meeting minutes. There were none cited.

Reed reviewed the meeting revised agenda, which included:

- Radioactive Soil Action Level (RSAL) Working Group Workshop Update
- RSAL Workshop (4/27-28/01) Update
- Health Effects Workshop Update
- Task 1 Peer Review and Response
- End State Management Discussion
- Set Future Agendas and Review Meeting

RSAL WORKING GROUP WORKSHOP UPDATE

Reed identified the objectives for the RSAL Working Group Workshop Update:

- Inform Focus Group About Workshop Results
- Get Feedback From Focus Group

Tim Rehder, U.S. Environmental Protection Agency (EPA), updated the Focus Group on the RSAL Working Group and its progress in establishing parameters for RESRAD model input. Tim distributed a summary table showing the values currently agreed upon by the Working Group (Appendix B). The values in the table apply to two of the land use scenarios being evaluated: the rural resident scenario and the wildlife refuge worker scenario.

Tim noted that each input parameter had been identified as a point value or a probability distribution function (PDF). Where PDFs are applied, the type of distribution is noted. References and sources of data are also indicated.

Tim stated that the results for mass loading (used in air resuspension) had just been determined and are attached to the summary table.

Tim indicated that the parameters would be discussed in detail at the April 27 - 28, 2001 Workshop.

Tim stated that, with internal agreement on the parameters, the RSALs Working Group would proceed to the dose and risk calculations. He expects the analyses to be completed in the next two weeks, with a draft report ready for distribution to the Focus Group by the end of May 2001.

A member of the Focus Group asked if the input values resulting from new science would be addressed in the RSALs Task 4 report. Tim responded that the development of parameter values from the new science would be documented in the RSALs Task 3 report.

Reed asked that the RSAL Working Group update the RFCA Focus Group on its progress in setting the input parameters and calculating dose and risk values at the next Focus Group meeting.

RSAL WORKSHOP (4/27-28/01) UPDATE

Ken Korkia updated the group on the upcoming Public Workshop on RSALs, planned for April 27 - 28, 2001 at the Westin Hotel in Westminster. Workshop planning is complete and success is expected. The agenda for the two-day meeting is:

Day 1 (4/27/01)

- Informational / educational presentations
- Two case studies: John Till's work at RFETS and Dr. Higley's study at Johnson Atoll
- Demonstration of the RESRAD 6.0 code
- General presentations on the development of models and their bases
- A more focused presentation and discussion on the specific application at RFETS

Day 2 (4/28/01)

- Identification and discussion of specific modeling issues of concern
- Conclusions and next steps

Ken distributed workshop notebooks to those attending the event.

HEALTH EFFECTS WORKSHOP

Mary Harlow, City of Westminster, presented the results of an initial planning session for a Health Effects Workshop (Appendix C). She indicated that the purpose of the Health Effects Workshop would be to examine the current state of the science of radiation health effects, with a focus on recent developments.

The members of the Focus Group discussed possible topics and presenters for the Workshop.

Suggested topics for the workshop included:

- Relation Of Risk To Health Effects
- What Are Allowable/ Acceptable Risks
- The Science and Politics of Dose Models (ICRP30 & ICRP72)
- The Epidemiology of Health Effects

Potential presenters at the workshop might include Dr. Antone Brooks, Dr. Owen Hoffman and Dr. Steve Wing. Information may also be obtained from or presented by John Till, Dr. Robert Bistline, and possibly from presenters on a recent similar panel at Brookhaven National Laboratory.

Mary closed the discussion with a note that the planning would continue. All members of the Focus Group were invited to participate. Mary promised to get the word about planning discussions out through AlphaTRAC's distribution channels.

RSAL TASK 1 PEER REVIEW

Reed began the topic by listing objectives for the discussion:

- Hear Agency Responses to the Task 1 Peer Reviews
- Hear Key Issues and Changes Made to the Task 1 Report
- Discuss the Revised Report as a Group
- Get "Final Word" From Focus Group Members
- Close the Discussion of the Task 1 Report at the Focus Group.

Tim Rehder briefed the Focus Group (Appendix D) on the current status of the Task 1 (Regulatory Analysis) report. He also identified key comments made by the peer reviewers and members of the Focus Group.

Tim summarized significant aspects of the regulatory analysis:

- It did identify the National Regulatory Commission (NRC) rule or the State's decommissioning rule as an Applicable or Relevant and Appropriate Requirement (ARAR); it is not applicable to the site, but it is relevant and appropriate. EPA and the U.S. Department of Energy (DOE) agree.
- With respect to the regulatory analysis and the proposal for an RSAL, the RSAL does have to meet the 25 mrem dose requirement; that is, 25 mrem to an anticipated future user.
- When the RSAL is triggered, an As Low As Reasonably Achievable (ALARA) analysis will be required for each project. It recognizes the fact that there is a preference for unrestricted release.
- The RSAL must also meet the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) protectiveness requirement; that is, 10-4 to 10-6 risk range.
- The only way the RSAL will be based on the 25-mrem dose is if in fact the risk associated with that dose falls inside the risk range.
- The RSAL proposed in the regulatory analysis is based on an anticipated future user; that being a wildlife refuge worker. When an action is triggered, an ALARA analysis will be conducted to determine if the ALARA goal can be reached, which will be based on a rural resident scenario.

Tim reminded the Focus Group that the RSALs being calculated in this activity are for surface soils only. RSALs for subsurface soils will also have to be determined, but in a separate, later process. Tim also noted that the RSALs are not intended to be protective of water quality - protection of water quality will also be addressed separately. He also

reminded the group that RSALs are action levels and do not necessarily represent final cleanup levels.

A brief discussion followed this part of Tim's presentation. The discussion focused on the choice of land use scenario for an anticipated future user. Some members of the Focus Group indicated that the resident rancher would be a more appropriate scenario because it is a more conservative (protective) scenario and the lifetime of the contamination is very long. The questions of what time period is associated with "reasonably anticipated" was brought up and discussed. Tim indicated that the intended time period could be identified, but was unavailable for today's meeting.

Tim then identified key review comments from the peer reviewers and Focus Group members:

- Who is the RSAL intended to protect?
- How does the RSAL relate to water protection?
- Is it appropriate to use the NRC rule? In that, it was primarily on the subject of whether the NRC rule and the dose limits within the NRC rule are in fact protective.
- Institutional controls are not discussed in detail in the report.
- The choice of risk level - 10-4, 10-5, and 10-6 - remains open.
- The wildlife refuge worker scenario is not a done deal yet.
- Subsurface and surface water.
- Multiple Tiers. Right now the proposal doesn't talk about retaining a two-tiered system for RSALs. There is sentiment among DOE and the Colorado Department of Public Health and Environment (CDPHE) as well as some members of the community that a multi-tier system would be useful.
- The ultimate cleanup levels would not be decided in this document.
- The concept of dose and its applicability.
- The issue of what are permitted exposures, assuming institutional control failure.
- The concept of the average member of the critical group.
- Is the proposal consistent with the Wildlife Refuge Act?
- Should the resident rancher be the driving scenario?
- What sort of periodic reviews will / should be conducted?

Tim referred the Focus Group to the peer review response document for a more detailed analysis. He indicated that no significant changes had been made to the most recent revision of the Task 1 report in response to the comments.

The members of the Focus Group then held a discussion about the Regulatory Analysis.

One important topic was the time period associated with "foreseeable future" for the "reasonably anticipated land user." The CERCLA 5-year review and the NRC rule's mention of 1,000 years were both noted. Members of the Focus Group noted that this was important because it is expected that contamination will remain and institutional controls will be in place. The eventual failure of institutional controls - before the lifetime of the contamination is over - was a major concern to the members of the community.

The issue of ALARA was also discussed at length. Tim indicated that the RFCA parties agree that the approach to ALARA is an open issue. ALARA has historically been a workplace concept and its application to cleanup is relatively new. The Focus Group agreed that ALARA and its place in the regulatory picture for cleanup should be further addressed.

The issue of when to apply ALARA was also discussed. A Focus Group member asked, and the agencies confirmed, that ALARA would be applied in almost every cleanup action. However, it was a concern for several Focus Group members that ALARA will apparently only be addressed in contaminated areas that exceed the RSAL. It was felt important that ALARA also be examined for locations that are contaminated but do not exceed the RSAL. It was felt by some that the uncertainties in long-term future land use and dose / risk estimates would argue for application of ALARA at lower contamination levels than the RSAL. This led to a discussion of multiple tiers.

The history of multiple tiers, their introduction into the RFCA process, and their intent for use in prioritizing accelerated cleanup for an interim end state were discussed. The potential utility in the use of multiple tiers to trigger ALARA was investigated. The basic idea was to establish an RSAL that would trigger cleanup action, and a lower RSAL number that would trigger an examination of other actions and ALARA. The Group agreed that the issue of multiple tiers should be placed on the table for detailed discussion by the Focus Group.

The issue of "conservative" vs. "anticipated" land use was addressed further. Several members of the Focus Group reemphasized their support for the use of the resident rancher scenario as a conservative approach to setting the RSAL. One member noted

that a "ranchette" scenario had been identified and suggested that it was a realistic alternative to the historically defined resident rancher scenario.

The issue of RSALs and water quality protection was addressed as well. The agencies confirmed that the RSAL was intended to be protective of human health, and that the RSAL alone will not be protective of water quality. The agencies are anticipating a combination of remediation and re-grading in specific areas for protection of water quality.

A member of the Focus Group asked if the agencies were regulatorily required to set the RSAL at a risk level of 10-4. Tim responded that there was precedent for working at a lower risk level (more toward the 10-6 end of the range).

The Focus Group next conducted a Round Robin to get each member's "last word" on the Task 1 Regulatory Analysis report. Reed emphasized that this was not the end of public input, but only closure of the discussion at the RFCA Focus Group so that it could move on in its agenda.

John Ciolek: When I started here, I was interested in the RSAL process. I came in a little bit late. Listening to the regulatory analysis was informative. I think what I learned from that was it really doesn't matter because the RSAL is just a value that you're going to choose. Many people have brought up in the past they're more concerned about what the final cleanup level is going to be. Once you choose an RSAL, you go in there and start cleaning that up, the 903 Pad is the best example, you're going to be down to below that level. They're going to have the soil cleaned up well below any future land use scenario you can imagine. However, right next to it is contamination that they haven't touched or considered and that's going to be there.

Having not combined the cleanup level and the RSAL level, I think you're at pretty huge risk at upsetting many of the public around there.

Hank Stovall: From a regulatory standpoint, regulators migrate toward the upper end of the risk spectrum as opposed to the lower end. I'm not sure I understand why there's a range of 10-4 to 10-6 risk, but it's unacceptable to migrate to the bottom end of the range and try to fly that. People always want the highest range, which is the highest density. In this case, the regulators would have to apply the highest risk, 10-4, as a cleanup level. My view is it should be more of a higher range [toward the 10-6 risk level] as opposed to the lower end range. And I think the way we get there is through the ALARA process.

Gerald DePoorter: I think the approach that's outlined in that report is a good approach. My only concern is that there should be a multi tier system where you've got an RSAL and how you treat the areas that aren't at that level. I would favor going to a 2-tiered system, where you base one tier at one end of the risk range and the other tier at the other end of the risk range, and when you reach that first tier, that's where you apply ALARA.

Jerry Henderson: I think it [the Task 1 Report] answers a lot of questions but raises two big ones we see up on the board [multi-tiers and RSALs]. This group needs to prioritize those and discuss them so those questions can be answered before the public comment period of the RSAL review.

Ken Korkia: I second what Hank Stovall said.

Leroy Moore: I will second the comment that Hank Stovall made and add something. The topic we haven't really talked about is the relation between the RSAL and the cleanup level. I hoped what the agencies move toward is to make those as close to each other as possible in all cases so that there's not confusion and so that it's not a necessity to go back and clean something that met the RSAL, but maybe doesn't meet the cleanup level.

Mary Harlow: I think that there is difficulty with the NRC rule being applied to a plutonium cleanup site. I don't think we've covered some of the areas with that NRC rule as to what applied and what didn't apply to Rocky Flats. That would get into the ALARA discussion. I also think that we should be using 10-6 as the risk level to reach. I would like to see us get the best cleanup we can get without bankrupting the country. I don't want them to have to come back and do it again. Make sure that we're protected as an offsite community. Make sure that we're not going to have continual migration in our surface waters and that we're not going to have air emissions flowing into our communities. That's our big concerns.

Joe Goldfield: I think the regulatory analysis has to be rigorous and define its terms and have definite coordination between risk, between mrem's, and between the soil left in the ground. We're talking ephemeral things. We want numbers. I, with Hank, want to see what the RSAL results are at a risk level of 10-6. We need a definition. When we say 10-4 risk, how does that translate to mrem's? Also, the soil cleanup level must be coordinated with the risk factor and the mrem.

Tom Marshall: I'll also join the Hank club. In that vein, I wonder if applying the NRC rule at Rocky Flats is really the right thing to do. What we're doing is picking a higher-level action number and then seeing how low you can go from there. I think it would

be better if you pick a very conservative action value and see how much of that you can contain.

John Marler: I think the people around the room know where the Coalition board members who participate in this forum are coming from. I would say that many of the principles that we discuss here are shared by the entire Coalition board. We will continue to need to work and try to better understand, once we have the numbers, how ALARA can be applied and what this means in terms of the Rocky Flats site.

The Focus Group discussed their path forward following the Round Robin. The members agreed that two regulatory-related issues remained open and needed discussion by the group:

- ALARA,
- Multiple Tiers.

The Focus Group asked its Agenda Group to place these issues on future Focus Group agendas.

ROCKY FLATS END STATE - STEWARDSHIP

Reed listed objectives for the end state discussion at today's meeting:

- Inform Focus Group About Stewardship Thinking And "Baseline"
- Identify Options And Get Initial Feedback
- Identify Issues To Track/Discuss

Reed then summarized the intent and scope of the end state discussion. He indicated that the Focus Group would be defining the end state of the Rocky Flats Environmental Technology Site (RFETS) by first looking at key areas and examining the end state implications of each of those areas. When those discussions are finished, the group will examine the interrelationships among the areas and get a holistic sense of the options and their implications. The first thing to do is to get information and data on each of these subjects:

- Surface contamination,
- Subsurface contamination,
- Surface water standards and management,

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April 25, 2001, 3:30-6:30 p.m.

- Stewardship and post-closure obligations, and
- Groundwater.

John Rampe of DOE then began a presentation on "End State and Stewardship Overview" (Appendix E). He introduced four building blocks for end state decisions:

- RFCA,
- The Contract with Kaiser-Hill,
- The Baseline, and
- Other Regulatory Requirements.

John presented project baseline assumptions in four areas:

- Buffer Zone,
- Industrial Area,
- Surface Water,
- Stewardship.

The Focus Group discussed the end state options as the presentation was made.

The issue of building floor removal and evaluation of below-floor contamination was addressed. Kaiser-Hill indicated that contaminated floors would be removed, and that floors would be taken up as necessary to remove below-floor contamination. Uncontaminated floors would generally be left in place.

In the surface soil discussion, Kaiser-Hill stated that transportation and disposal costs will dominate the cost of surface soil remediation. DOE and Kaiser-Hill noted that some soil removed under ALARA might be sufficiently clean to use as fill at the site, avoiding the transportation and disposal costs.

This discussion led to concern on the part of some members about the degree to which the baseline and contract are being determined by assumptions about funding availability from Congress. They suggested that an alternative approach would be to put together the most technically sound cleanup plan, then sell the cost to Congress.

There was also discussion of the ability to use cost savings in other closure areas (such as Decontamination & Decommissioning (D&D) for remediation. DOE and Kaiser-Hill noted that this might be difficult, as the expectation is that cost savings would be

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returned to DOE for application at other cleanup sites (this being a premise of accelerated cleanup).

The time allocated to the end state dialog ran out while the group was partway through the discussion. The group decided to continue the discussion at the next Focus Group meeting.

NEXT MEETING AGENDA

The Focus Group made the following agenda decisions:

- Discuss the New Science (Task 4) report at the 5/9/01 meeting (as already planned),
- Continue and conclude the End State Options and Stewardship discussion begun today at the 5/9/01 meeting,
- Discuss ALARA and multi-tiered RSALs at the 5/23/01 and 6/6/01 meetings,
- Defer the end state discussions planned for the 5/23/01 and 6/6/01 meetings as necessary to make room for the ALARA and multi-tiered RSAL discussions.

The Focus Group asked their Agenda Group to revise the ongoing agenda accordingly.

ADJOURNMENT

The RFCA Focus Group meeting was adjourned at 6:35 p.m.

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**Appendix A
Participants List**

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**Appendix B
Tim Rehder: PDF Summary Table**

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**Appendix C
Mary Harlow: Health Effects Workshop Presentation**

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**Appendix D
Tim Rehder: RSALs Task 1 - Regulatory Analysis Presentation**

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**Appendix E
John Rampe: End State and Stewardship Overview
Presentation**

MEMORANDUM

TO: RFCA Focus Group Members

FROM: Shirley Garcia
Mary Harlow
LeRoy Moore

SUBJECT: First Meeting of Health Effects Workshop Planning Committee

DATE: April 18, 2001

Shirley, LeRoy and Mary met on April 12, 3:30 p.m. at the Rocky Flats Coalition of Local Governments Office to start outlining a process for a one day Workshop geared to providing a community, as well as focus group, education on radiation science, (health effects of high and low energy exposures to radiation) and to focus in on what is currently known and what is not known in this area as well as ongoing studies. Focus group members have expressed an interest in having a workshop on this important topic as a part of the current regulator Radionuclide Soil Action Level review process. Focus group members that are interested in helping to plan this workshop are urged to attend the next meeting which will be set after the April 25th focus group meeting. (Bring your calendar)

Outlined Below are some of our thoughts. We would appreciate your review of this information and feedback at the next Focus Group meeting on April 25, 2001 as to the who, what, when, where addressed in this memorandum. We would like to minimize expenses as much as possible. The goal is to provide a forum where workshop attendees will have the opportunity to hear top national scientists provide current information on what science currently knows and does not know about radiation health effects and how to compensate for the uncertainty

When: Saturday June 2 or Saturday June 9

Where: City of Westminster or City of Broomfield facilities. Whichever is available.

Who: (Possible List of Presenters...Others?)

We are proposing three presenters with perspectives from current research, epidemiology and policy for the proposed workshop. Having three speakers would allow enough time for good presentations and follow-up discussion.

Dr. Antone Brooks, Science Advisor to the DOE Low Dose Research Program Professor, Environmental Science Department, Washington State University at Richland. He is a Member National Council on Radiation Protection and Measurement Member of the National Academy of Sciences Committee, "Biological Effects of Ionizing Radiation (BIER VI)" Bio for Dr. Brooks will be sent out by email.

Dr. Steve Wing, Associate Professor, Department of Epidemiology, University of North Carolina, Chapel Hill. Dr. Wing has an extensive Bio, that will be emailed.

Dr. Owen Hoffman, President, SENES Oak Ridge Inc. Center for Risk Analysis. He has worked for both the public and private sectors in quantifying risk from exposure to radiation. Member of the National Council on Radiation Protection and Measurements and a corresponding member of the International Commission on Radiological Protection. Bio will be forwarded when received.

WHAT (proposed topic areas, others?)

- Biological response to low doses of radiation and plutonium exposures. Topic will be focused on what science currently knows and does not know about health effects of exposures
- Current information that is known about the genetic factors that affects the susceptibility of individuals and populations to damage from low-dose radiation.
- Possible pathways for exposure.
- Radiation protection standards ICRP 72 and ICRP 30 – Differences between the two and justification for changes made to ICRP 30.

Regulatory Analysis

- NRC Rule is a Relevant and Appropriate Requirement
 - So 25 mRem/yr dose requirement must be met
 - ALARA Analysis will be required for each project
 - There is a preference for unrestricted use.

Regulatory Analysis

- The RSAL must also meet the CERCLA protectiveness requirement (RSAL must fall within the risk range of 10^{-4} to 10^{-6})
- If 25 mRem/yr is not within the risk range, the RSAL will be based on a value within the Range

RSAL/Cleanup Level Proposal (surface soil)

- RSAL will be based on the anticipated future user (wildlife refuge worker)
- When an action is triggered (contamination > RSAL) ALARA analysis will be performed to determine if cleanup can be achieved that will support unrestricted use.
- An ALARA Goal will be calculated using a rural resident scenario.

RSAL/Cleanup Level Table

Land Use	25 mRem	10-4	10-5	10-6
Refuge Worker	?	?	?	?
Open Space User	?? (child/adult)	?	?	?
Office Worker	?	?	?	?
Rural Resident	?? (child/adult)	?	?	?
Resident Rancher	?? (child/adult)	?	?	?

The RSAL is Not the End All Number

- This RSAL is meant to apply to surface contamination. A subsurface RSAL will be developed later
- The RSAL is not meant to protect surface water. A comprehensive strategy protecting surface water will be developed.
- In most cases it does not represent a cleanup level for surface soils.

Comments on the Regulatory Analysis

- What is the purpose of the RSAL (who is it meant to protect)
- How does RSAL relate to water protection
- Is it appropriate to use NRC Rule (especially the dose limit)
- Institutional Controls are not discussed in detail

Comments continued

- There are still open issues such as:
10-4, 10-5 or 10-6
- Wildlife Refuge not a done deal
- Subsurface and surface water
- Multiple Tiers
- Ultimate Cleanup Levels

Comments Continued

- Concept of Dose
- Permitted Exposure assuming IC failure
- Average Member of Critical Group
- Is Proposal Consistent with Wildlife Refuge Act?
- Shouldn't Resident Rancher be the driving scenario?
- What about periodic reviews?

End State and Stewardship Overview

Joe Legare and Jeremy Karpatkin

RFCA Focus Group

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The Situation

- How much contamination will remain at Rocky Flats at the conclusion of the cleanup? What steps will be taken to assure that this residual contamination does not pose a health risk to a future user or an offsite individual in the short and long run?
- How can DOE, the regulators and the community work together to understand interrelated end state issues and make better informed, holistic decisions on end state?
- Funding limitations are real. The Site is unlikely to receive funds beyond the ~\$4 billion currently budgeted for contract completion.

Building Blocks for Decisions

- RFCA
- The Contract
- The Baseline
- Other regulatory requirements

RFCA Intermediate Site Condition (2008 to 2021)

(from RFCA preamble)

- All nuclear material and TRU waste removed
- all buildings down or reused
- all other waste safely stored or removed
- cleanup consistent with presumed land use of open space and/or limited industrial use
- surface and ground water leaving site safe for any and all uses
- surface water on site safe for any and all uses

Contract End State -- Physical Completion (for target cost, schedule and scope.)

- Buildings down (except those with mission)
- All IHSSs remediated according to RFCA
- All waste removed
- Closure caps for landfills, solar ponds and 700 area or other remediation per RFCA
- Building foundations & other structures covered by minimum of three feet of fill after final grade
- Surface water on site will meet health based standard based on open space use
- Water leaving site meets current WQCC water standards
- Assumptions regarding overall quantities of waste generated throughout project

Project Baseline Assumptions

- Buffer Zone
 - Remediated to Tier 1 (651 pCi/g Pu for 903 pad)
 - Ponds B1, B2 and B3 sediments removed
 - no other major surface rad remedial actions beyond 903 pad
 - Evapo-transpiration caps over old and current landfills
 - enhancement of SID south of the 903 pad
 - all unneeded groundwater monitoring wells abandoned
 - continued operation and maintenance of passive groundwater treatment systems
 - Remove contents of ash pits

More project baseline assumptions

- Industrial Area -- clean to Tier 1
 - Original Process Waste Lines
 - ~20% of lines removed
 - balance left in stable condition (no pathway or no contamination)
 - Under building contamination -- clean to Tier 1
 - Building Foundations
 - all removed to three feet below final grade
 - below three feet removed if contaminated
 - below three feet left in place if free-releaseable
 - Solar pond evapo-transpiration cap
 - clean building rubble used as fill
 - no cosmetic regrading

More Baseline Assumptions

- Surface Water
 - ponds --
 - in place; passive management
 - additional retaining structure at Indiana Street
 - standards
 - 0.15 pCi/l offsite
 - 141 pCi/l on site
 - wetlands
 - not used for water protection
 - no funds for offsets or maintenance

More baseline assumptions

- Stewardship -- post closure infrastructure
 - Ponds in place with New Dam at Indiana
 - South Interceptor Ditch in place
 - 3 caps (landfills and Solar Ponds Area)
 - Some Original Process Waste Lines
 - clean rubble recycled as fill
 - clean foundations
 - passive groundwater treatment systems
 - Roads
 - east and west access roads remain
 - other paved roads and parking lots removed
 - buffer zone dirt roads remain but not maintained
 - Post closure obligations outside of KH scope

Other Regulatory Considerations

- Final Site Record of Decision
- Post RFCA Agreement
- CERCLA Five Year Review
 - maintenance of engineered barriers
 - environmental monitoring
 - review of remedies for protectiveness
 - review of Institutional Controls
 - public involvement

The Cleanup Options that Affect End State

- Surface Soil Remediation
- Subsurface Soil Remediation
- Surface Water Protection
- Stewardship (post closure oversight, maintenance, monitoring and communication.)
- Other

Options -- Surface Soil

- No excavation (engineered controls only)
 - tilling
 - enhanced vegetation
 - application of fixatives
 - covers
 - fencing
- Excavation levels for 903 pad (most of surface soil scope)
 - 651 pCi/gram Baseline (RFCA Tier 1)
 - 115 pCi/gram (RFCA Tier 2: ~ \$13-\$17 mil.)
 - 80 pCi/gram (RAC: ~\$18 - \$23.5 mil.)
 - 35 pCi/gram (RAC: ~\$47 - \$61 mil.)

More Options -- Surface Soil

- Alternatives to offsite disposal
 - big cost of removal is shipping and disposal, not excavation
 - use excavated soil at low RSALs for fill in building basements, or use CAMU (the lower the RSAL, the more options may become available)
- Other factors -- water management options, ecological impacts and mitigation
- Precise costs for these factors not known

Options -- Surface Water Management

- Standards
 - Change standard to reflect new EPA cancer slope factors, or actual uses
 - measured at current Points of Compliance or elsewhere
 - go to mass loading
 - go to longer averaging periods
- Configuration of final water management system
 - maintain ponds as is
 - focus offsite with additional retention facility (~\$10 mil)
 - focus on site with regrading, ditches, wetlands, etc.

More Options - Surface Water Management

- Additional remediation as a surface water management strategy
- Recontouring/revegetation of Industrial Area
- Basic studies (water balance, land configuration, AME, others) will help better define the range of options.

Options -- Stewardship

- Implementation of any of the options discussed affects the DOE stewardship profile
- What form should the DOE presence take?
 - Rocky Flats museum
 - Renewable Energy
 - Ownership of residual contamination
- CERCLA Review
 - Frequency, intensity and independence of review
 - Citizen oversight and involvement in review
- Institutional Controls: is a wildlife refuge enough?
- Information Retention and accessibility

Other

- How to ensure that remediation and management scope isn't lost if other portions of the project overrun cost and schedule?
- How to apply cost savings from other parts of project to remediation and management?
- How much sampling is enough?

DRAFT Focus Group Path Forward (through July, 2001)

(Revised 5/03/01)

Meeting	Agenda
May 9	<ul style="list-style-type: none"> • RSALs: New Science (Task 4) <ul style="list-style-type: none"> Focus Group Summary of Task 4 Issues ◦ RSALs Workshop Outcomes and Issues ◦ ER: Stewardship (Cont.)
May 23	<ul style="list-style-type: none"> • RSALs: Model Evaluation (Task 2) <ul style="list-style-type: none"> RFCA Parties' Responses to Peer Review Comments EPA RAGs modeling overview Focus Group Summary of Task 2 Issues ◦ ER: TBD in 5/9/01 Discussion
June 6	<ul style="list-style-type: none"> • RSALs: Multi-tier • ER: TBD in 5/9/01 Discussion
June 20	<ul style="list-style-type: none"> • RSALs: Parameter Evaluation (Task 3) [soft schedule – will depend on completion of work] ◦ RSALs: ALARA • ER: TBD in 5/9/01 Discussion
July 11	<ul style="list-style-type: none"> ◦ RSALs: Issue from RSALs Workshop / Science Review ◦ RSALs: ALARA, Cont. • ER: TBD in 5/9/01 Discussion
July 25	<ul style="list-style-type: none"> ◦ RSALs: Parameter Evaluation (Task 3) <ul style="list-style-type: none"> RFCA Parties' Response to Peer Review Comments • ER: TBD in 5/9/01 Discussion